WILLIAM WANG

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Education

2024: B.A. Cornell University, double major in Computer Science and Physics, GPA 4.13.

Research Experience

2021-Present: Undergraduate Researcher, Laboratory of Atomic and Solid State Physics, Cornell University (advisors: Prof. Itai Cohen and Prof. James Sethna)

- Developed computational models for simulating the elasticity of fiber networks.
- Implemented GPU-accelerated code to efficiently find the minimal energy of large-scale filamentous networks undergoing rigidity percolation.
- **Senior Thesis** in characterizing the differences in elastic scaling behavior and mechanical properties between isotropic and anisotropic (strained) networks through numerical simulations.

2019-2021: Research Assistant, Laboratory for Laser Energetics (LLE), University of Rochester (advisor: Dr. Stephen Craxton)

- Conducted research in fusion energetics and wrote code to simulate and optimize new case geometries (hohlraums) for laser-driven nuclear fusion.
- Developed and characterized a novel hohlraum design with high levels of uniformity for experiments on the 60-beam OMEGA target chamber at LLE.
- Published **one first-author journal paper in Physics of Plasmas.**
- Made **four oral presentations** at three Annual Meetings of the APS Division of Plasma Physics.

2016-2019: Research Assistant, Clinical Cardiovascular Research Center, University of Rochester (advisor: Dr. Jean-Phillippe Couderc)

- Developed an online calculator for assessing the absolute risk of life-threatening cardiac events in long QT syndrome patients.
- Created visualization tool to compare patient ECG and intake drug concentration data.

2017: Project Assistant, Computational Biomedicine Lab, Rochester Institute of Technology (advisor: Prof. Linwei Wang)

- Created a user interface for segmenting heart images and reconstructing 3D meshes.

Teaching Experience

2021-2024: Teaching Assistants for five computer science classes:

- CS 4220: Numerical Analysis: Linear and Nonlinear Problems (Spring 2024)
- CS 4120: Introduction to Compilers
- CS 3410: Computer System Organization and Programming
- CS 2112: (Honors) Object Oriented Programming and Data Structures
- CS 1112: Introduction to Computing: An Engineering and Science Perspective

2017-2019: Summer Camp Counselor, Rochester Museum and Science Center, Rochester, New York

- Designed and facilitated lesson plans for students ages 5-11 at full-day camps during summers and school breaks.

Work Experience

2022: Software Development Intern, Block Inc. (formerly Square), San Francisco, CA.

- Worked in the Square Banking and Spend Team and developed production server-driven UI code (in Kotlin) for Square Card management and onboarding applets.
- Created a new flow, on both backend and Android client to add validations for sellers updating their addresses, and aggregated card spend data for visualizable graphs.
- **Winner of the intern hackweek**. Filed **one US patent application** after presenting the proposal to corporate executives.

2018: Cyber Security Intern, Eaton Cybersecurity SAFE Lab, Rochester Institute of Technology

- Tested device-penetration against IoT devices.
- Created a network of virtual machines for protection-testing.

Publications

W. Y. Wang and R. S. Craxton, "Pentagonal prism spherical hohlraums for OMEGA," Physics of Plasmas Journal, volume 28, issue 6 (2021).

W. Y. Wang and R. S. Craxton, "A Proposal for Pentagonal Prism Spherical Hohlraum Experiments on OMEGA," University of Rochester Laboratory for Laser Energetics Review, volume 166 (2021).

W. Y. Wang, "Development of a Beam Configuration for the SG4 Laser to Support both Direct and Indirect Drive," University of Rochester Laboratory for Laser Energetics High School Summer Research Program (2019).

Oral Presentations

W. Y. Wang and R. S. Craxton, "A Proposal for Spherical Hohlraums Experiments on OMEGA Using Seven Laser Entrance Holes," APS Division of Plasma Physics Annual Meeting 2020.

R. S. Craxton, P. Farmakis, M. A. Marangola, **W. Y. Wang**, E. Wu, R. Betti, "Assessment of the 60-Beam OMEGA Geometry for Applications to Future Laser Systems," APS Division of Plasma Physics Annual Meeting 2023.

R. S. Craxton, **W. Y. Wang**, M. A. Marangola, M. E. Campbell, "A Dual Laser-Beam Configuration Compatible with Both Symmetric Direct Drive and Spherical Hohlraums," APS Division of Plasma Physics Annual Meeting 2021.

R. S. Craxton, **W. Y. Wang**, M. E. Campbell, "A New Beam Configuration to Support both Spherical Hohlraums and Symmetric Direct Drive," APS Division of Plasma Physics Annual Meeting 2020.

Poster Presentations

W. Y. Wang, S. J. Thornton, I. Cohen, J. P. Sethna, "Rigidity Percolation in Anisotropic Fiber Networks," Cornell Society of Physics Students 2023.

Patents

W. Y. Wang, O. Bakare, A. Roy, D. King, "Multi-participant media control and playback," US Patent application filed in Feb. 2023 based on work at Block Inc., San Francisco, CA.

Awards

Best Compiler Award, 2022: Awarded for compiler with the fastest speedup and one of highest correctness scores, CS 4120, Cornell University.

American Computer Science League, Rhode Island, 2020: Ranked 1st in New York State, All Star Finalist.

Schreiner STEM Award 2020: $5,000 Scholarship granted to two of top STEM students in Pittsford Sutherland High School.

Maureen O'Donnell Oxford Classical Dictionary Award, 2020: Four-time winner of National Latin Exam Gold Medal.

Xerox Award for Innovation and Information Technology, 2019: University of Rochester award for strong interest in innovation and a high level of achievement in this area, and leading other students to new approaches to old problems.

Extracurricular Activities

Cornell Maker Club, Nordic Skiing Team, Running Club, Wind Symphony.